

Claims

1. A machine for slitting plane packaging blanks (3), especially packaging blanks made of corrugated board, said machine including a driving roller assembly (1'a, 1'b, 5', 5'') for advancing said packaging blanks, as well as at least one rotatable slitting roller (7) with at least one knife (9) for producing a front edge slit (11) and/or a rear edge slit (13) in each packaging blank, **characterised in** that the knife (9) is circular, i.e. sector-shaped, and defined by two knife edges (9a, 9b), said knife extending across a central angle (ν) of max. 300° , whereby said knife presents a gap (19) between the edges (9a, 9b), and that a portion (9A) of said knife (9) adjacent the first knife edge (9a) is adapted to cut the front edge slit (11) out of the front edge (15) of said blank (3) by means of the slitting roller (7) and a driving motor connected to said slitting roller as well as by means of the controlling programme timer, whereas a second portion (9B) of the knife (9) adjacent the other knife edge (9b) is adapted to cut the rear edge slit (13) out of a location on the blank (3) adjacent the rear edge (17) of said blank and rearwards through said rear edge (13) by means of said slitting roller (7), said driving motor (21) and said programme timer (23) while said blank (3) is advanced through the machine at a uniform speed.
2. A machine according to claim 1, **characterised in**, that by means of the slitting roller (7), the driving motor (21) and the programme timer (23) the knife edge (9a) of the first knife portion (9A) is in connection with the production of the front edge slit (11) adapted to be turned from an initial position (B) in which the knife edge (9a) is positioned at a predetermined central angle x (the arc $\frac{\pi}{180} \cdot rx$) from radius to the cutting site (25) substantially corresponding to the desired slit length, and a central angle x forwards until the front edge slit (11) has been cut, whereafter said knife (9) is retarded when the knife gap (19) is positioned above the blank (3), and that the knife edge (9b) of said second knife portion (9B) or an additional knife is adapted also by means of said slitting roller (7), said driving motor (21) and said programme timer (23) to be turned from an initial angular position (y) and down-

wards into the cutting site (25) for the production of the rear edge slit (13) and subsequently be turned (9) a segment corresponding to the length (b) of the rear edge slit (13) of said blank, whereafter said second knife edge is retarded and then turned forwards in such a manner that the first knife edge (9a) reaches its initial position (B)
5 ready to receive a subsequent packaging blank (3).

3. A machine according to claim 1 or 2, **characterised in** that by means of the slitting roller (7), the driving motor (21) and the programme timer (23), the knife (9) is adapted during the cutting of both the front edge slit (11) and the rear edge slit
10 (13) to run at a peripheral speed which is substantially identical with the advancing speed of the packaging blank (3).

4. A machine according to claim 1, 2 or 3, **characterised in** that by means of the slitting roller (7), the driving motor (21) and the programme timer (23), the knife
15 (9) is adapted to ensure that during the retarding movement the peripheral speed of said knife (9) is finally zero.

5. A machine according to one or more of the claims 1 to 4, **characterised in** that the knife (9) extends across a central angle α of max. 270° , especially 225° , and
20 that the angle β is in the range $30^\circ < \beta < 70^\circ$, and the angle γ is in the range $30^\circ < \gamma < 70^\circ$.

6. A machine according to one or more of the claims 1 to 5, **characterised in** that the driving motor (21) is a servomotor, such as an electric step motor, or a me-
25 chanical/hydraulic driving motor.

7. A machine according to one or more of the claims 1 to 6, **characterised in** that at least one sensor device (27) is mounted before the slitting roller when seen in the advancing direction (A) of the packaging blanks (3), said sensor device (27) de-
30 tecting entering packaging blanks (3) and being adapted to activate the programme timer (23) on arrival of a packaging blank (3).

8. A machine according to one or more of the claims 1 to 7, **characterised in** that a back-pressure roller (30) is provided below the slitting roller (7), said back-pressure roller (30) for instance including two relatively thin, circular disks interspaced a distance corresponding to the thickness of the knife (9).

9. A machine according to one or more of the claims 1 to 8, **characterised in** that the back-pressure roller (30) arranged below the slitting roller is provided with a resilient coating preferably made of rubber.